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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROGER K. BOLTON

Appeal 2016-008223
Application 13/732,646
Technology Center 2600

Before ALLEN R. MacDONALD, ROBERT E. NAPPI, and JOHN R. KENNY, *Administrative Patent Judges*.

MacDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Introduction

Appellant appeals under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–33. Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

Exemplary Claims

Exemplary claims 1 and 17 under appeal read as follows (emphasis and formatting added):

> 1. A method comprising:
>
> ***characterizing a complex mechanical system in terms of functions***; and
>
> using a computer system to display and fill in bowtie charts to identify problems and solutions with respect to the functions.
>
> 17. A ***graphical bowtie chart*** for analyzing a complex mechanical system, the chart generated by a computer, the chart comprising:
>
> a ***name of a persistent function*** of the system at a knot,
>
> a ***set of causes*** on a first side of the knot,
>
> a corresponding ***set of results*** on a second side of the knot,
>
> a corresponding ***set of results*** on a second side of the knot,
>
> at least ***one reason entry*** between each cause and the knot, and
>
> at least ***one solution entry*** between each result and the knot.

Rejections on Appeal

1. The Examiner rejected claims 1–4, 17, 19, 26, and 27 under 35 U.S.C. § 102(b) as being anticipated by Vinnem (*Offshore Risk Assessment, Principle, Modelling and Applications of QRA Studies*, 2nd Edition 2007, (Section 6.1.4 Bow-tie), pp 160–169).[1]

2. The Examiner rejected dependent claim 5 as being unpatentable under 35 U.S.C. § 103(a) as being unpatentable over the combination of Vinnem and Philley ("*Collar hazards with a Bow-Tie*," Chemical Processing, Jan. 23, 2006, http://www.chemicalprocessing.com/articles /2005/612/).

3. The Examiner rejected claims 6–13, 18, 20–25, and 28–32 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Vinnem, Philley, and Yuan et al. (US 2006/0288261 Al; Dec. 21, 2006). [2]

4. The Examiner rejected claims 14, 25, and 33 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Vinnem and Romer (US 2008/0280280 A1; Nov. 13, 2008).

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[1] Separate patentability is not argued for claims 2–4, 17, 19, 26, and 27. To the extent that claims 17, 19, and 26 are discussed, Appellant merely repeats for claims 17, 19, and 26 the argument directed to claim 1. Such a repeated argument is not an argument for "separate patentability." As to claims 2–4 and 27, these claims are argued by virtue of their dependence from claim 1. App. Br. 18, 22. Thus, the rejections of these claims turns on our decision as to claim 1. Except for our ultimate decision, claims 2–4, 17, 19, 26, and 27 are not further addressed herein.

[2] Separate patentability is not argued for claims 7–13, 21–24, and 29–32. Thus, the rejection of these claims turns on our decision as to the claims from which they depend. Except for our ultimate decision, these claims are not further addressed herein.

5. The Examiner rejected claims 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Vinnem and McCall (US 2008/0059291 A1; Mar. 6, 2008).[3]

Appellant's Contentions

1. Appellant contends that the Examiner erred in rejecting claim 1, under 35 U.S.C. § 102(b) because "**Vinnem fails to expressly or inherently describe 'characterizing a complex mechanical system in terms of functions'**."

> Characterizing the complex mechanical system 110 in terms of functions is known in the art as "***functional modeling***."

App. Br. 11, emphasis added.

> [C]laim 1 is directed to a method for ***functionally modeling*** a complex mechanical system. Furthermore, utilizing extrinsic evidence as is allowed under the broadest reasonable interpretation standard, ***functional modeling*** is a structured representation of the functions (e.g., activities, actions, processes and operations) of the modeled system.

App. Br. 12, emphasis added.

> Appellant submits that a person of ordinary skill in the art would interpret the phrase "characterizing a complex mechanical system in terms of functions" to mean modeling a complex mechanical system in terms of what it, and its corresponding subsystems, does and/or its purpose.
>
> On the other hand, Vinnem, as described in its Chapters 5, is directed to describing methodologies for undertaking quantified risk assessments (hereinafter "QRA") for offshore rigs and vessels. At a general level, the QRA described by Vinnem is focused on identifying hazards for an off shore rig or vessel

[3] We treat claim 15 as representative. Separate patentability is not argued for claim 16. Except for our ultimate decision, claim 16 is not discussed further herein.

> and associating causes of the hazard to consequences of the hazard through an initiating event . . .

App. Br. 12.

"Vinnem characterizes events in terms of hazards, causes of the hazards and consequences of the hazards," ***not what something does and/or its purpose***. App. Br. 14, emphasis added.

> [I]t appears that the Office maintains that Vinnem describes "characterizing a complex mechanical system in terms of functions" on its pages 165–166, repeated below:
>
> [Appellant quotes the paragraph bridging Vinnem pages 165–66]
>
> However, this section is inconsistent with the broadest reasonable interpretation standard articulated for the above-identified application. ***Such interpretation lacks any description of describing a system in terms of what it does and/or its purpose***. Rather, this section of Vinnem discloses that systems are described in terms of hazards and/or risks.

App. Br. 16, emphasis added.

"[C]haracterizing a complex mechanical system in terms of functions" ***means describing a mechanical system in terms of what it does and/or its purpose***. App. Br. 17, emphasis added.

2. Further, Appellant contends that the Examiner erred in rejecting claim 1, under 35 U.S.C. § 102(b) because "**Vinnem fails to expressly or inherently describe 'using a computer system to display and fill in bowtie charts to identify problems and solutions with respect to functions'**."

[T]he method of claim 1 also describes ***utilizing a computer*** to identify problems and solutions to what the mechanical system does and/or its purpose. App. Br. 18, emphasis added.

> As noted above, the entirety of Vinnem fails to describe, depict, teach, or suggest defining a system in terms of what it does and/or its purpose. Instead, as noted before, Vinnem is solely focused on describing systems in terms hazards and/or risks. Accordingly, Vinnem ***fails to expressly or inherently describe utilizing a computer*** to identify problems and solutions to what the mechanical system does and/or its purpose, as is consistent with the broadest reasonable interpretation standard for this application.

App. Br. 18, emphasis added.

3. Appellant contends that the Examiner erred in rejecting claim 5, under 35 U.S.C. § 103(a) because:

> Philley fails to describe, depict, teach, or suggest characterizing a complex mechanical system in terms of functions consistent with the broadest reasonable interpretation standard outlined above and ***thus fails to resolve Vinnem's deficiencies***.

App. Br. 24, emphasis added.

4. Appellant contends that the Examiner erred in rejecting claim 6, under 35 U.S.C. § 103(a) because:

> Yuan ***fails to resolve the deficiencies*** of the Vinnem and Philley references.

App. Br. 25–26, emphasis added.

5. Appellant contends that the Examiner erred in rejecting claim 14, under 35 U.S.C. § 103(a) because:

> Romer ***fails to resolve the deficiencies*** of the Vinnem reference.

App. Br. 26, emphasis added.

6. Appellant contends that the Examiner erred in rejecting claim 15, under 35 U.S.C. § 103(a) because:

> McCall ***fails to resolve the deficiencies*** of the Vinnem reference.

App. Br. 27.

7. Appellant contends that the Examiner erred in rejecting claim 18, under 35 U.S.C. § 103(a) because:

> Yuan ***fails to resolve the deficiencies*** of the Vinnem and Philley references.

App. Br. 28, emphasis added.

8. Appellant contends that the Examiner erred in rejecting claim 20, under 35 U.S.C. § 103(a) because:

> Yuan ***fails to resolve the deficiencies*** of the Vinnem and Philley references.

App. Br. 29, emphasis added.

9. Appellant contends that the Examiner erred in rejecting claim 25, under 35 U.S.C. § 103(a) because:

> Romer ***fails to resolve the deficiencies*** of the Vinnem reference.

App. Br. 29, emphasis added.

10. Appellant contends that the Examiner erred in rejecting claim 28, under 35 U.S.C. § 103(a) because:

> Yuan ***fails to resolve the deficiencies*** of the Vinnem and Philley references.

App. Br. 30, emphasis added.

11. Appellant contends that the Examiner erred in rejecting claim 33, under 35 U.S.C. § 103(a) because:

> Romer ***fails to resolve the deficiencies*** of the Vinnem, Philley, and Yuan references.

App. Br. 31, emphasis added.

Issues on Appeal

Did the Examiner err in rejecting claim 1 as anticipated because Vinnem fails to describe the argued limitations?

Did the Examiner err in rejecting claims 5, 6, 14, 15, 18, 20, 25, 28, and 33 as being obvious?

Appellant's Definitions and Examples

> A ***system*** may be characterized as a construct or ***collection of different components*** that together produce results not obtainable by the components alone. These components ***may include***, ***without limitation***, ***people***, hardware, software, facilities, policies, and documents.

Spec. [16], emphasis added.

> A ***complex mechanical system*** as used herein refers to a system including sophisticated mechanical components (and optionally system logic) that is difficult to comprehend without the aid of analytical tools. ***Examples*** of complex mechanical systems ***include***, but are not limited to, space launch systems, commercial aircraft, missile defense systems, satellites, biomedical devices, nuclear plants, automotive systems, and large construction projects such as bridges.

Spec. [16], emphasis added.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's contention (Appeal Brief and Reply Brief) that the Examiner has erred. We disagree with Appellant's conclusions.

As to Appellant's above contention 1 directed to claim 1, we disagree that the Examiner has erred. First, Appellant argues "[c]haracterizing the complex mechanical system 110 in terms of functions is known in the art as

'functional modeling.'" App. Br. 12. We disagree. While "functional modeling" might be limited to "characterizing a complex mechanical system in terms of functions," we see no reason for the reverse reading of "characterizing a complex mechanical system in terms of functions" as limited to "functional modeling." Nor are we able to find a dictionary definition of "characterizing" which corresponds to Appellant's attempted reading of the term as "modeling." Rather, "characterize" means "1. to mark or distinguish as a characteristic; be a characteristic of: *Rich metaphors characterize his poetry*. 2. to describe the character or individual quality of: *He characterized her in a few well-chosen words*. 3. to attribute character to: *to characterize him as a coward*." *The Random House Dictionary of the English Language*, 347 (2nd Ed. Unabridged; 1987). We find the most relevant of these definitions to be "to describe the character of."

We conclude Appellant is attempting to interpret claim 1 to impermissibly import the "functional modeling" limitation from the Specification into the claim. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (cautioning against reading limitations from specification into the claims). As such, we find Appellant's argument unpersuasive and we decline to find Examiner error based on Appellant's proposed importation of limitations from the Specification. Although the claims are interpreted in light of the Specification, limitations from the Specification are not read into the claims. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

Second, Appellant argues "a person of ordinary skill in the art would interpret the phrase 'characterizing a complex mechanical system in terms of functions' to mean ***modeling*** a complex mechanical system in terms of what

it, and its corresponding subsystems, does and/or its purpose." App. Br. 12, emphasis added. As to the term "modeling," again we see no basis for importing this limitation in from the Specification. Otherwise, we agree with Appellant except to the extent that Appellant substitutes "modeling" for "characterizing." That is, we agree "in terms of functions" means "in terms of what it, and its corresponding subsystems, does and/or its purpose."

However, Appellant further argues that Vinnem lacks any description of characterizing a mechanical system in terms of what it does and/or its purpose. We disagree with this argument. The Examiner's rejection cites to Vinnem at pages 160–169. Appellant acknowledges that Vinnem teaches "identifying hazards for an offshore rig." App. Br. 12. Based on Appellant's definition and examples (*supra*) of "a complex mechanical system," we conclude that an offshore rig is such a complex mechanical system. Also, Appellant's definition of system (*supra*) shows that "people" can be components in such a "complex mechanical system." Further, page 166 of Vinnem teaches a bow-tie that includes "Activities & tasks," i.e., functions within the system. We conclude that Vinnem's tasks depicted in the bow-tie describe (characterize) the system in terms of what it does. Nothing more specific is required by the language of claim 1.

As to Appellant's above contention 2 directed to claim 1, we disagree. Vinnem at page 166 teaches a bow-tie tool called THESIS and cites to Appendix A. Contrary to Appellant's argument that "Vinnem fails to expressly or inherently describe" utilizing a computer system to display and fill in bowtie charts to identify problems and solutions with respect to the functions., Appendix A of Vinnem explicitly states that THESIS is a "software tool."

As to Appellants' above contention 3–11, we disagree. Appellant's arguments are all premised on there being deficiencies in the Vinnem reference. Which alleged deficiencies, Appellant then argues, propagate through the rejections unresolved by the secondary and tertiary references. As discussed above, we find no such deficiencies which need to be resolved. Therefore, these arguments do not persuade us of Examiner error.

CONCLUSIONS

(1) The Examiner has not erred in rejecting claims 1–4, 17, 19, 26, and 27 as being anticipated under 35 U.S.C. § 102(b).

(2) The Examiner has not erred in rejecting claims 5–16, 18, 20–25, and 28–33 as being unpatentable under 35 U.S.C. § 103(a).

(3) Claims 1–33 are not patentable.

DECISION

The Examiner's rejections under 35 U.S.C. §§ 102 and 103 of claims 1–33 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED [4]

[4] As the Examiner has shown that all the claims are unpatentable, we do not also reject Appellant's claims 1–33 under 35 U.S.C. § 101 as not being directed to patent eligible subject matter. However, should there be further

prosecution of these claims; the Examiner's attention is directed to our following concerns.

We note that claims 1–16 and 19–33 are directed to abstractions in the form of bowtie charts, where a computer is used to characterize a complex mechanical system by the abstractions. The Examiner's attention is directed to the Court's decision in *Alice Corp. Pty. LTD., v. CLS Bank Inter.*, 134 S.Ct. 2347 (2014) and any agency guidance subsequent to the close of prosecution before the Examiner. The Supreme Court in *Alice* set forth a two-part test to determine compliance of a claim with § 101. The Court held that a mere instruction to implement an abstract idea on a computer cannot impart patent eligibility. 134 S.Ct. at 2357-59.

We note that claims 17 and 18 are directed to an abstraction in the form of a bowtie chart which is comprised of various abstract data content. A claim directed to an abstraction was not deemed statutory subject matter even before the Court's decision in *Alice*. Subsequent to *Alice*, even less basis exists to find such claims to be statutory subject matter.